





New records of *Neocrex erythrops* (Sclater, 1867) (Aves, Rallidae) from Espírito Santo state, Brazil

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Abstract

Neocrex erythrops (Sclater, 1867), Paint-billed Crake, is a difficult bird to find and has few, scattered records spread over Brazil. The state of Espírito Santo has only one documented record of this species, which is based on a specimen collected in 1940. After 76 years since this first and only record, we present new records of *N. erythrops* from Espírito Santo. The new data increase the knowledge of this species in the state.

Keywords

Distribution, Neotropics, Atlantic Rainforest, rails

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Introduction

Neocrex erythrops (Sclater, 1867), Paint-billed Crake (Aves, Rallidae), inhabits marshes and flooded grasslands (Ridgely et al. 2015). This bird species is about 18–20 cm long and weighs approximately 60 g (Taylor et al. 2020). Like other rallids, it is difficult to observe (Sick 1997; Taylor et al. 2020), as it rarely moves away from places concealed by vegetation. Even when birds come out of the cover of vegetation, they quickly return to their shelter for protection at the slightest sign of danger (Ayerbe-Quñones 2018). Therefore, one of the easiest ways to detect rallid species is by their loud, long, and frequently emitted trills (Depino et al. 2021).

Neocrex erythrops (Sclater, 1867) has a wide distribution, with records ranging from North America

(Arnold 1978) to South America, where it occurs in Brazil, Bolivia, Colombia, Venezuela, Guyana, French Guiana, Suriname, Argentina, Ecuador, and Peru (Taylor and Van Perlo 1998; BirdLife International 2016). In Brazil, there are a few scattered records in the states of São Paulo, Pernambuco, Mato Grosso, Goiás, Ceará, Pará, Rio Grande do Sul, Acre, Minas Gerais (Silva and Olmos 2007; Pereira et al. 2008; Kirwan 2009; Lopes et al. 2012; Bertin et al. 2017; Guilherme et al. 2017; Tonini et al. 2020). Despite being widely distributed in the country, records of this species are few and far between. In this context, a review of their distribution is necessary to identify areas where they are more likely to be found. This will also help to inform which occurrence records

are likely based on migrant or wandering individuals (Taylor et al. 2020).

Espírito Santo state is located in the coastal region of southeastern Brazil and has only one documented record of this species, in the city of Ibirapu (Willis and Oniki 2002; Simon 2009). The specimen was collected in 1940 by L. Ferreira and deposited at the Museu de Zoologia da Universidade de São Paulo (MZUSP-Aves 22557). The collection site is 66 km north of Vitória, the state capital, and is part of the Atlantic Forest domain. Considering the scarcity of records of this species within Espírito Santo, we present new records of *N. erythrops* in the state.

Methods

To update the occurrence areas of *N. erythrops* in Espírito Santo, we searched records from: 1) literature data; 2) ornithological collections at the following institutions, including Museu de Biologia Professor Mello Leitão (MBML), Museu de Zoologia da Universidade de São Paulo (MZUSP), Centro de Coleções Taxonômicas da Universidade Federal de Minas Gerais (DZUFMG), Coleção de Aves do Museu de Ciências Naturais da Pontifícia Universidade Católica de Minas Gerais (MCNA); (3) online platforms, including WikiAves (<http://www.wikiaves.com>) and e-Bird (<https://ebird.org>); (4) online databases, including GBIF (<http://www.gbif.org>) and SpeciesLink (<http://splink.cria.org.br/>); and (5) our own

records. All geographic coordinates were transformed into decimal degrees, in the WGS 1984 datum. An occurrence map was created with QGIS v. 2.18 (QGIS 2018).

Results

New records (Fig. 1). BRAZIL – Espírito Santo • Vitória, urban area in Bento Ferreira; 20°18'39"S, 040°18'35"W; 5 m a.s.l; 07.XII.2016; Jacques Passamani obs.; 1 specimen (WA2392933); individual found debilitated in the backyard of a house. About two years later, another individual was rescued and sent to CETAS/IBAMA in Vitória • Santa Teresa, urban area in Dois Pinheiros; 19°56'10"S, 040°35'36"W; 648 m a.s.l; 11.IV.2020; Pedro R. Bartholomay; 1 specimen (MBML 7718); individual found dead after a night of heavy rain (Fig. 2A) • Rio Bananal, ES-360 Highway; 19°14'53"S, 040°22'49"W; 86 m a.s.l; 09.I.2021; Luan G. Bissa obs.; 1 individual found dead by the side of the road (Fig. 2B).

Identification. *Neocrex erythrops* has a short beak with a red base, red legs, white throat, brown-olive mantle, and black and white barred flanks, which distinguish it from the other species in the family. *Mustelirallus albicollis*, for example, has the same habitat preference but has a black-mottled mantle, brown legs, and a greenish beak. *Aramides saracura*, another rallid, has a gray chest and belly, whitish throat, testaceous mantle, and black forehead. Although the vocal repertoire of *N. erythrops* is largely unknown, it includes a vocalization consisting

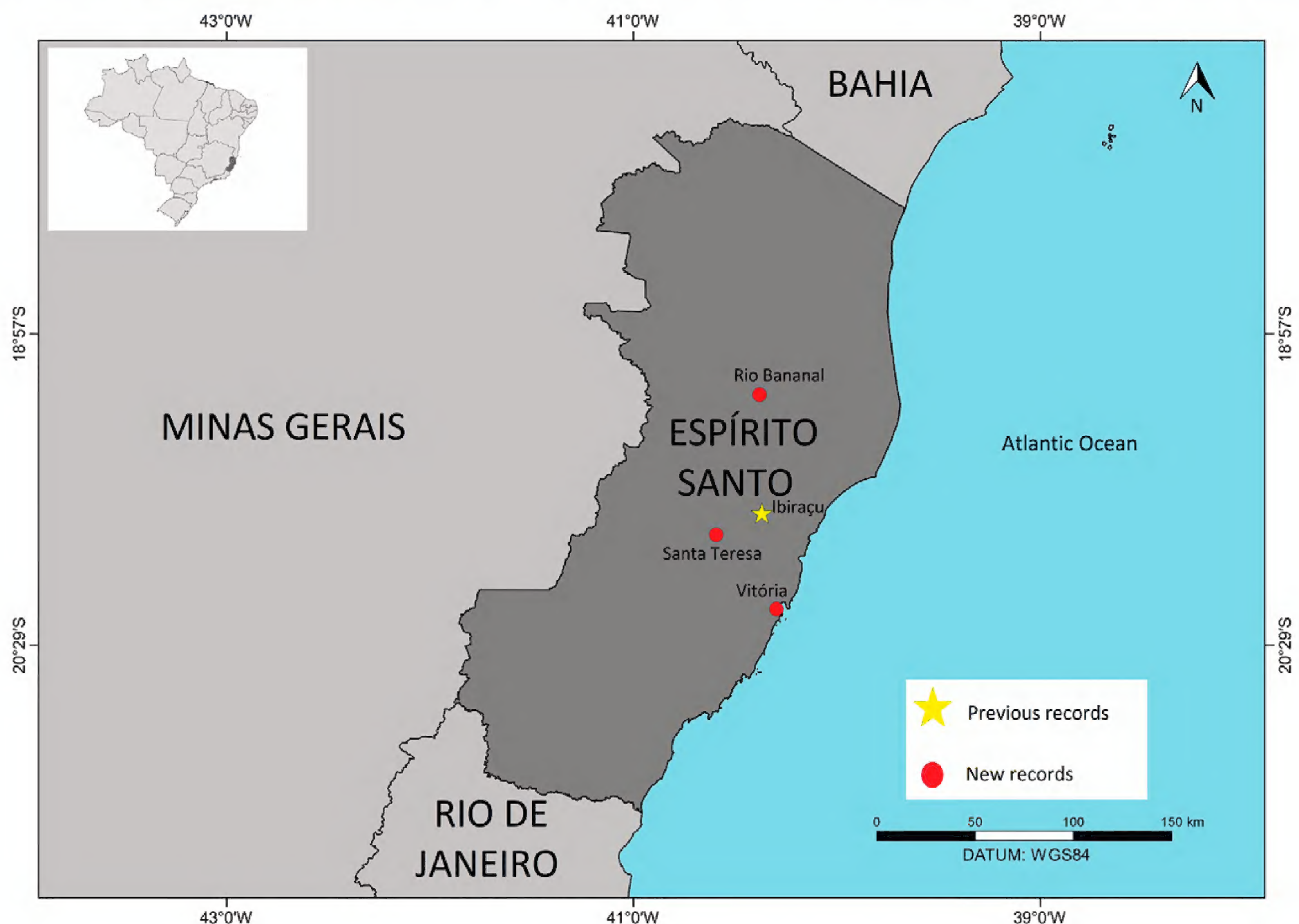


Figure 1. Adult of *Neocrex erythrops*. **A.** From Santa Teresa (MBML 7718). **B.** From Rio Bananal, Espírito Santo state, Brazil.



Figure 2. Adult of *Neocrex erythrops*. **A.** From Santa Teresa (MBML 7718). **B.** From Rio Bananal, Espírito Santo state, Brazil.

of a low and rapid trill which may last for several minutes (Taylor et al. 2020).

Discussion

Knowledge of the geographic distributions of species with aloof behavior and that are rarely seen or heard is still a challenge for ornithologists in the 21st century. *Neocrex erythrops* is one such species, as shown by our records which are all based on individuals found dead or debilitated. The only previously known record from Espírito Santo of this species is a specimen collected on 13 October 1940 (MZUSP 24557) in the city of Ibirapu (ca. 19°49'57"S, 040°22'19"W), which means *N. erythrops* has not been seen again for 76 years.

All individuals of *N. erythrops* included here were found dead or debilitated within the urban or rural perimeter, indicating that it has some tolerance to anthropogenic areas as long as its preferred habitat (water bodies, e.g., marshes and flooded grasslands) is present nearby (Ridgely et al. 2015). Records of this species in places considered unconventional, such as urban areas, have already been documented (Remsen and Parker 1990). Attraction to the lights of urban environments has been reported for other species of rallids (Barnett 2000; Lopes et al. 2010; Lopes et al. 2012). Artificial lights attract insects, including beetles, which are food resources consumed by *N. erythrops* (Walter 1993; Taylor et al. 2020). Thus, it is possible that individuals of *N. erythrops* have been attracted by artificial lights to the interior of the urban areas where they were found, both in Vitória and Santa Teresa. As with the Santa Teresa specimen, there are reports of individuals crashing into windows or found dead after a night of heavy rains (Sick 1997; Silva and Olmos 2007; Bertin et al. 2017).

As for the seasonality of the records, all records were made between December and April, rainy season in Espírito Santo (Alvares et al. 2013), coinciding with most

records of *N. erythrops* from southeastern Brazil (see Silva 2017; Godoy 2018; Santos 2020). Several species of rallids (e.g., *Porzana Carolina* and *Pardirallus sanguinolentus*) move regularly between regions, being recorded in different areas depending on the time of year (Ciach 2006; Stermin et al. 2012; Eason et al. 2013). This leads us to believe that *N. erythrops* behaves similarly, since rallids are considered great flyers, though they usually do not do so during the day (Sick 1997). In some South American countries, *N. erythrops* was reported as a migrant (Hilty 2003; Gallardo and Carrillo-Chica 2020), but their migratory patterns are still largely unknown. Even though records of the species in the southeast indicate a greater chance of detection in the rainy season, it is still considered neither migratory nor partially migratory in Brazil (Somenzari et al. 2018).

The records compiled by us increase the knowledge of occurrences of *N. erythrops* in Espírito Santo. These rare and important records demonstrate a gap in knowledge of the distribution of *N. erythrops* in the state. The paucity of records may be due to the difficulty in observing this species, its aloof behavior, and some movement pattern that makes sightings possible only in certain times of the year. Thus, additional study of this species, its distribution, and its movement patterns are necessary.

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Authors' Contributions

Conceptualization: GAS. Data curation: GAS, FGC. Visualization: GAS. Writing – original draft: GAS, ERA, MNMB, FGC. Writing – review and editing: GAS, ERA, MNMB, FGC.

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